

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**Patent Application**

Applicant(s): V.N. Kumar et al.  
Case: 5-5  
Serial No.: 10/723,150  
Filing Date: November 26, 2003  
Group: 2134  
Examiner: Christopher J. Brown

Title: Access Control List Constructed as a Tree of Matching Tables

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REPLY BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The remarks which follow are submitted in response to the Examiner's Answer dated June 24, 2008 in the above-identified application. The arguments presented by Appellants in the corresponding Appeal Brief dated May 5, 2008 are hereby incorporated by reference herein. In the Answer at pages 8-12, Section (10), the Examiner responds to various arguments raised by Appellants in the May 5, 2008 Appeal Brief. Appellants will address below certain of the arguments presented by the Examiner.

With regard to independent claim 1, the Examiner argues that Cathey is relied upon to teach a multi-level tree representation of an access control list (ACL), and that Holdsworth teaches the limitations of claim 1 relating to at least one level of the tree representation of the ACL other than a root level of the tree representation of the ACL comprising a plurality of nodes

with at least two of such nodes each having a separate matching table associated therewith. However, the tree representation in Holdsworth is not a tree representation of an ACL. In the portions of Holdsworth relied upon by the Examiner, it is not an ACL itself that is organized in a tree structure, but instead is a tree of topics, also referred to in Holdsworth as a “topic tree.” See Holdsworth at paragraphs [0044] and [0045]. Each topic in the tree either has its own explicit ACL, or inherits an ACL from a higher level topic in the tree. See Holdsworth at paragraphs [0051] and [0058]. Thus, Appellants submit that the Holdsworth reference provides no teachings whatsoever regarding the construction of a tree representation of an ACL, much less the particular ACL tree representation limitations that are set forth in claim 1. To the contrary, Holdsworth relates to construction of topic trees, where each node of the topic tree either has its own explicit ACL or inherits an ACL from a higher level topic.

The Examiner further argues that the topic tree in Holdsworth is a tree representation of an ACL because one node of the topic tree can inherit the ACL of a higher level node of the topic tree. However, this is contrary to the teachings of Holdsworth which indicate that permission to publish on or subscribe to particular topics is controlled on a per-topic basis, utilizing the explicit or inherited ACL associated with that topic. See, for example, paragraph [0049] of Holdsworth, which indicates that “[t]he ability of users to publish information, or subscribe to information depends on the setting of the Access Control Lists (ACLs). The ACLs are set on topics to which the message is published. Publishers must have permission specified in the ACL to publish to the required topic. Subscribers must have permission specified in the ACL to subscribe to the required topic.” Although multiple ACLs may be collected by traversing the topic nodes of the topic tree, none of the individual ACLs referred to in Holdsworth is described therein as being represented by a tree. The topic tree itself cannot reasonably be characterized as a single ACL as is apparently alleged by the Examiner.

The Examiner states that Cathey and Holdsworth are not incompatible because “both teach comparing data at each branch.” However, Cathey relates to a single ACL, while Holdsworth relates to a topic tree where each topic of the topic tree has an explicit or inherited ACL. Accordingly, Appellants submit that one skilled in the art would not be motivated to adopt the topic tree structure of Holdsworth to the single ACL of Cathey. The structural aspects of the

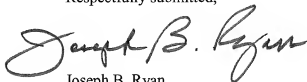
topic tree in Holdsworth relate to topics and not to rules of an ACL. In the claimed invention, the levels of the ACL tree representation are each associated with a corresponding one of the fields of one or more rules of the ACL. This is clearly not the case in the Holdsworth topic tree, and thus one skilled in the art would not be readily able to adapt the topic tree teachings of Holdsworth to a tree representation of a single ACL.

The Examiner nonetheless argues that it would be obvious “to use the header information decision tree of Cathey and the ACL of Holdsworth. The combination allows the decision tree to safely classify packets by comparing incoming packets with ACL data.” Appellants respectfully submit that this alleged motivation is fundamentally deficient. First, the ACL described in Cathey taken alone already performs packet classification. Second, Holdsworth does not describe a tree representation of an ACL, but instead a tree representation of topics, each of which may have an associated explicit or inherited ACL. Accordingly, the topic-based structure of Holdsworth is not readily adaptable to the single ACL of Cathey, and may well be unworkable, or at least unduly complex and therefore impractical, in the single ACL context of the Cathey reference.

Appellants therefore respectfully submit that the Examiner is attempting a hindsight-based piecemeal reconstruction of the claimed invention from disparate references. The collective teachings of Cathey and Holdsworth fail to meet the limitations of claim 1 relating to a tree representation of an ACL, and one skilled in the art would not be motivated to adapt features of a tree of topics as disclosed in Holdsworth to a tree representation of a single ACL as disclosed in Cathey. As Appellants noted in their Appeal Brief, the claimed arrangements provide significant advantages relative to conventional arrangements such as the per-field LPM approach, and it is believed that these advantages are not achieved by the proposed combination of Cathey and Holdsworth. See the specification at page 8, line 6, to page 9, line 24, and page 11, lines 10-17.

For the reasons identified above and in their May 5, 2008 Appeal Brief, Appellants respectfully submit that claims 1-20 are allowable over the prior art of record.

Respectfully submitted,

A handwritten signature in black ink, reading "Joseph B. Ryan". The signature is fluid and cursive, with the first name "Joseph" and last name "Ryan" clearly legible.

Date: August 22, 2008

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